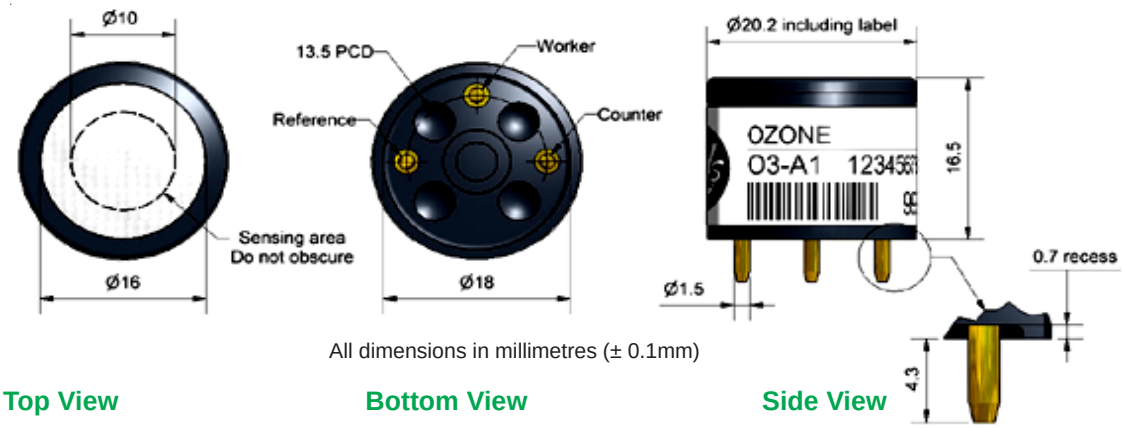
O3-A1 Ozone Sensor

PATENTED

Technical Specification

Figure 1 O3-A1 Schematic Diagram



All dimensions in millimetres (± 0.1mm)

Top View Bottom View Side View

PERFORMANCE			
Sensitivity	nA/ppm in 1ppm O_3		-400 to -1000
Response time	t_{90} (s) from zero to 1ppm		<30
Zero current	ppb equivalent in zero air at 20°C		-200 to +100
Noise*	RMS (ppb equivalent)		2 to 5
Lower detection limit	(ppb equivalent)		5
Bias potential	V		0
Range	ppm O_3 limit of performance warranty		0 to 2
Linearity	ppm error at full scale, linear at zero and 1ppm O_3		< 5%
Overgas limit	maximum ppm for stable response to gas pulse		10ppm (TBD)
LIFETIME			
Zero drift	ppm equivalent change/year in lab air		ND
Sensitivity drift	% change/year in lab air, monthly test		ND
Operating life	months until 80% original signal (12 month warranted)		>24
ENVIRONMENTAL			
Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 20ppm		ND
Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 20ppm		ND
Zero @ -20°C	ppm equivalent change from 20°C		ND
Zero @ 50°C	ppm equivalent change from 20°C		ND
CROSS SENSITIVITY			
H_2S sensitivity	% measured gas @ 20ppm	H_2S	ND
NO_2 sensitivity	% measured gas @ 0.5ppm	NO_2	25 to 45
Cl_2 sensitivity	% measured gas @ 10ppm	Cl_2	ND
NO sensitivity	% measured gas @ 50ppm	NO	ND
SO_2 sensitivity	% measured gas @ 1ppm	SO_2	-5 to +3
CO sensitivity	% measured gas @ 400ppm	CO	ND
H_2 sensitivity	% measured gas @ 400ppm	H_2	ND
C_2H_4 sensitivity	% measured gas @ 400ppm	C_2H_4	ND
CO_2 sensitivity	% measured gas @ 5%	CO_2	ND
KEY SPECIFICATIONS			
Temperature range	°C		-20 to +40
Pressure range	kPa		80 to 120
Humidity range	% rh non-condensing		15 to 90
Flow rate dependence	sccm		500 (0.5L/m)
Storage period	months @ 3 to 20°C (stored in sealed pot)		6
Load resistor	Ω (recommended)		47 to 100
Weight	g		6

*** Requires a low noise potentiostat circuit for lowest noise and best resolution**

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O3-A1 Performance Data

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Figure 2 : Time trace of the linear response between 0 – 226 ppb Ozone

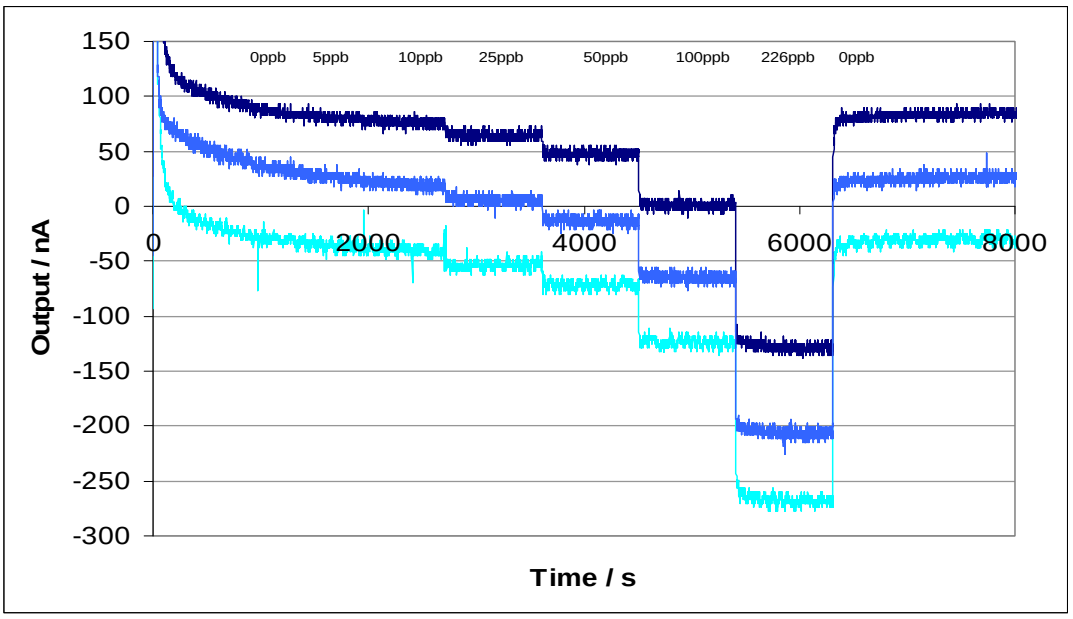
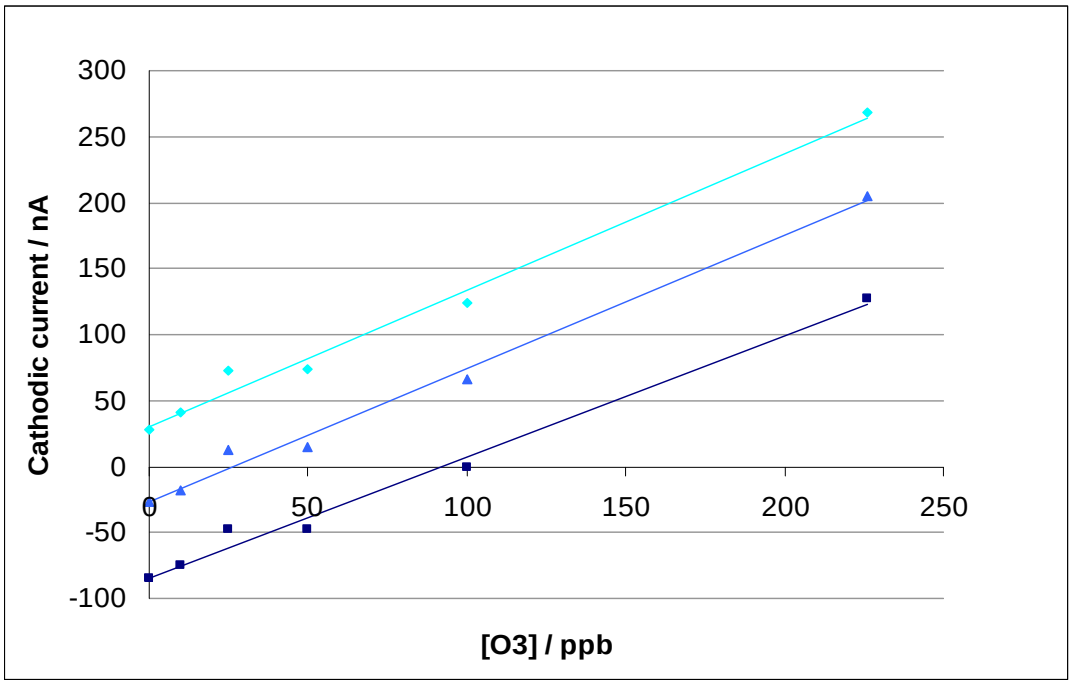


Figure 3 : Linear calibration using the data from figure 2



NOTE: all sensors are tested at ambient environmental conditions, with 10 ohm load resistor, unless otherwise stated. As applications of use are outside our control, the information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the sensors are suitable for their own requirements.

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